



IN THE U.S. PATENT AND TRADEMARK OFFICE

IPW

Applicant(s): Daniel J. SCHLITZ et al.

For: ION-DRIVEN AIR PUMP DEVICE AND METHOD

Serial No.: 10/754 441 Group: 1724

Confirmation No.: 7983

Filed: January 9, 2004 Examiner: Unknown

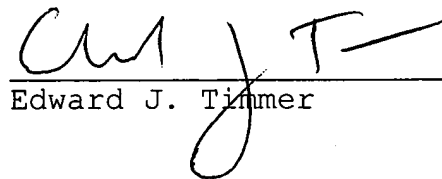
Atty. Docket No.: PU2109

Commissioner for Patents  
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Sir:

I hereby certify that this correspondence is being deposited with the United States Postal Service under 37 CFR 1.8 as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on December 24, 2004.

  
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Correspondence: Information Disclosure Statement including  
enclosures listed thereon



PATENT APPLICATION  
December 23, 2004

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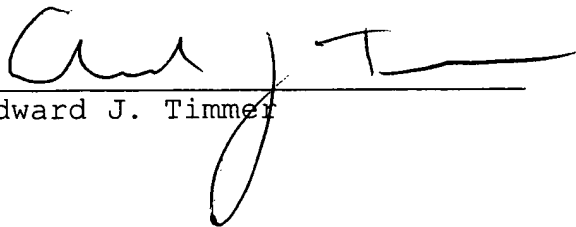
INFORMATION DISCLOSURE STATEMENT

Sir:

This Information Disclosure Statement is being filed in accordance with the duty of disclosure under 37 C.F.R. § 1.56 and pursuant to 37 C.F.R. § 1.97-1.98. Enclosed herewith is Form PTO-1449 including a copy of each of the documents listed. Accordingly, further comment at this point in time should not be necessary.

Further consideration is respectfully solicited.

Respectfully submitted,

  
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Edward J. Timmer

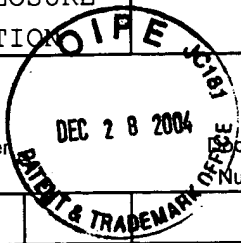
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### U.S. PATENT DOCUMENTS

Examiner Initial*	Document Number	Date	Name	Class	Sub Class	Filing Date

### FOREIGN PATENT DOCUMENTS

Examiner Initial*	Document Number	Date	Country	Class	Sub Class	Translation Y/N

### OTHER DOCUMENTS (Including Author, Title, Date, Pages, Etc.)

AA	Shin et al., "High-temperature electron emission from diamond films," J. Vac. Sci., B 21(1), Jan/Feb 2003, pp. 587-592.
AB	Tuckerman et al., "High-Performance Heat Sinking for VLSI," IEEE Electron Device Letters, Vol. EDL-2, No. 5, May 1981, pp. 126-129.
AC	Fuhr et al., "Travelling wave-driven microfabricated electrohydrodynamic pumps for liquids," J. Micromech. Microeng., 4, 1994, pp. 217-226.
AD	Sobhan et al., "A comparative analysis of studies on heat transfer and fluid flow in microchannels," Microscale Thermophys Eng., Vol. 5, 2001, pp. 80-92.
AE	Stuetzner, "Ion Drag Pressure Generation," J. Appl. Phys., Vol. 20, 1959, pp. 984-994.
AF	Ahn et al., "Fabrication and experiment of a planar micro ion drag pump," Sensors and actuators, Vol. A 70, 1998, pp. 1-5.
AG	Wong et al., "Development of a micropump for microelectronic cooling," MEMS, DSC-Vol. 59, ASME, 1996, pp. 239-244.
AH	Frank et al., "Corona wind cooling of horizontal cylinders in air," ASME/JSME Thermal Engineering Conference, Vol. 4, 1995, ASME, NY, pp. 261-267.
AI	Owsenek et al., "Theoretical and Experimental Study of Electrohydrodynamic Heat Transfer Enhancement Through Wire-Plate Corona Discharge," J. of Heat Transfer, Vol. 119, August 1997, pp. 604-610
AJ	Kucеровsky et al., "Corona Wind in a System with the Pin-to-planar Discharge Geometry," IEEE Industry Applications Society 34th Annual Meeting, Vol. 1, 1999, pp. 14-19.

EXAMINER	DATE CONSIDERED
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\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

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### OTHER DOCUMENTS (Including Author, Title, Date, Pages, Etc.)

	AK	Bondar et al., "Effect of neutral fluid velocity on direct conversion from electrical to fluid kinetic energy in an electro-fluid-dynamics (EFD) device," J. Phys. D: Appl. Phys., Vol. 19, 1986, pp. 1657-1663.
	AL	Steutzer, "Ion Drag Pumps," J. Appl. Phys., Vol. 31, 1960, pp. 136-146.
	AM	Robinson, "Movement of Air in the Electric Wind of the Corona Discharge," Trans. Am. Inst. Electr. Engng. Commun. Electron (AIEE J.), 1961, pp. 143-150.
	AN	Kalman et al., "Enhancement of heat transfer by means of a corona wind created by a wire electrode and confined wings assembly," Applied Thermal Engineering, Vol. 21, 2001, pp. 265-282.
	AO	Owsenek et al., "Experimental Investigation of Corona Wind Heat Transfer Enhancement With a Heated Horizontal Flat Plate," J. of Heat Transfer, Vol. 117, May 1995, pp. 309-315.
	AP	Kang et al, "Diamond Microemitters - The New Frontier of Electron Field Emissions and Beyond," New Diamond and Frontier Carbon Technology, Vol. 11, 2001, Abstract only.
	AQ	Garimella et al., "Transport in Microchannels - A Critical Review," Annual Review of Heat Transfer, Vol. 14, 2003, pp. 1-50.

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